

THE TREATMENT OF OBSTRUCTION OF THE COMMON GALL-DUCT.

By THEODORE A. MCGRAW, M.D.,

OF DETROIT.

WHILE operations on the gall-bladder have become very frequent during the past two or three years, the operations on the common gall-duct for the relief of jaundice caused by impacted gall-stones have been comparatively infrequent.

This is to be ascribed in part to the great and sudden popularity given to the operation of cholecystenterostomy, among American surgeons at least, by the invention of that unique and ingenious mechanical device, the Murphy button. There is something exceedingly attractive in a procedure by which, in a few minutes and with comparatively little danger, a patient may obtain relief for the time being, at least, from the discomfort and distress incident to obstructive jaundice.

This is certainly accomplished in skilful hands by the use of the Murphy button. The viscera to be united by its aid are comparatively superficial, and a small abdominal incision serves to expose them and to perform the work. The button is easily and quickly adjusted, the bile begins immediately to pass through the new channel, the jaundice disappears, the intolerable itching ceases, the feces acquire their proper look and odor, and the patient feels himself almost at once relieved from a serious illness, and begins to consider himself a well man. It is, therefore, no wonder that the device has, so to speak, taken the surgical world by storm, and that surgeons have been eager to test the promising invention. In the report of Dr. Murphy, published on February 9, 1895, thirty-six cases of cholecystenterostomy were

reported by various surgeons for non-malignant obstructive jaundice with only one death, a truly astounding success, if all cases have been reported, for an operation still new and on trial. In the light of such reports, one feels almost ashamed to proclaim himself a doubting Thomas, and yet there must be, for the discovery of truth, a few who criticise as well as many who applaud, and I venture to publicly state the reasons why I do not consider cholecystenterostomy a proper operation for those cases of jaundice in which the obstruction is caused by the presence of a stone in the common duct. The objections to the procedure begin at once to become manifest the moment that we ask ourselves what else ought to be done by a conscientious surgeon besides affording immediate relief to unpleasant symptoms, or we may approach the subject in a different way by asking what morbid conditions might remain after a successful cholecystenterostomy, to plague the patient and cause further disability. We will see in the first place that while the symptoms caused by the obstruction have been made to disappear, the stone which caused the obstruction is still in the common duct, irritating it by its presence, and now that the stream of bile has been diverted into a new channel without any possibility of being forced forward into the intestine. It remains a constant source of irritation which spreads usually, in time, beyond the walls of the duct, and causes peritoneal inflammations and adhesions. It may even produce abscess and suppuration, with all their dangerous consequences. How little of the local irritation produced by the presence of gall-stones is due to the mere obstruction of the bile stream is seen in the case of those stones which lodge in the cystic duct. Where this occurs there is no pressure whatever exerted at the point of obstruction, for the simple reason that the bile has a free channel for escape through the common duct into the intestine; and yet these stones in the cystic duct which cause no jaundice, no itching, no damming up of the bile stream, nevertheless produce in very many instances the most acute and constantly recurring agony. Now, while the common duct is larger than the cystic, and while it requires a larger calculus to fill its lumen, when obstruction does occur in its territory, it may

cause no less disturbance and danger. Here then is the first serious objection to the operation with the Murphy button. While it relieves, it does not cure. It leaves behind a focus of irritation which may develop into a condition of danger, and, however important it is to relieve pain, our surgery should aim at something more. We should try not only to relieve but to cure.

But there are still graver objections to be urged against this procedure. We may be content to use an imperfect method in order to bring comfort even though it does not meet all indications, provided that it does no harm. It is important to ask of every new operation in what way the organism is injured by its use? What are the conditions left after the use of the Murphy button or any other operation for the establishment of a fistula between the gall-bladder and the gut? There is evidently in this operation a firm adhesion established between the gall-bladder and bowel. This must inevitably produce at times great traction on one or the other of these organs, and interfere with their movement, and with the performance of their proper functions. In fact, the adhesions produced by gall-stones are often more serious and cause more disturbance than the passage of the gall-stones themselves. It is not uncommon for surgeons, operating for bilious colic, to find the traces of old gall-stones in inflammations around the gall-bladder, and gall-ducts after the gall-stones have entirely passed away. Indeed, the gall-stones may in their passage cause no pain whatever, and yet leave behind adhesions which become productive of great distress. There is no more instructive paper in the last year's contributions than the one by Riedel, in which he describes the numerous cases upon which he had operated in which no gall-stones whatever were found, but in which all sorts of trouble were caused simply by adhesions. In some patients the trouble took the form of severe and dreadful colicky pains, and in others of flatulence and discomfort. Others still had been treated for years and dosed with all manner of drugs for a chronic dyspepsia which finally yielded to the severance of adhesions by the surgeon's knife. I have had during the last year a patient under

my care whose case will bear reporting in this connection as illustrating this point.

Augusta, a German girl, aged eighteen years, had for several years suffered from terrible attacks of colicky pain, which, coming at irregular intervals, would last sometimes for two or three days. In these attacks nothing would give her relief but large doses of morphine frequently repeated. Dr. R. A. Newman was called to attend her, and referred her to me with the diagnosis of cholelithiasis. I operated on her in July, 1894, and removed four gall-stones from the gall-bladder. As she had never been jaundiced and showed no signs of obstruction of the common duct, and as the bile poured out copiously through the resulting fistula, I concluded that I had reached the seat of her trouble. Scarcely, however, had she recovered from the operation when her attacks began again, and, as they continued in spite of all remedies, on September 4, 1894, I opened the abdomen again to search for other gall-stones in the ducts. The operation proved unsuccessful. No gall-stones could be found and the paroxysms of agony recurred oftener and lasted longer than before. Finally, on April 10, 1895, I made a large incision in the median line and thoroughly explored the stomach and bowels. I found the stomach adherent to the diaphragm throughout nearly its whole upper surface. I broke up all the adhesions and made it freely movable. The omentum was also widely adherent. I loosed it from its bowels and spread it carefully over the viscera. Thus far the patient, who has just left the hospital, has remained free from her old disorder.

The deductions to be drawn from such a case are self-evident. The pathological sequences were as follows: (1) A catarrhal trouble of the gall-ducts and gall-bladder; (2) the formation of gall-stones in the inflamed gall-bladder; (3) the passage of gall-stones through the ducts and out through the intestines; (4) inflammations extending from the gall-bladder and gall-ducts to the neighboring peritoneum, and, finally, the formation of permanent adhesions which bound the stomach, interfered with its normal movements and caused paroxysms of pain. The four stones in the gall-bladder represented probably a greater number which had been discharged without making the patient aware of

their presence. The histories recorded by Lauenstein, Riedel, and Kehr demonstrate plainly that permanent adhesions are a fruitful source of misery. It is bad surgery, therefore, to deliberately produce such adhesions between viscera normally mobile, as long as any other way lies open to the surgeon. This, then, is my second objection to the operation of cholecystenterostomy, that it produces permanent and unyielding adhesions between the bowel and gall-bladder, which may cause frequent pain, flatulence, and distress during the processes of digestion, and finally render the patient liable to attacks of obstruction of the bowel by the bending or twisting of the bowel, if the jejunum, at the point of attachment.

A case of Kehr's is very instructive in this connection as showing how little relief may be given in these cases by the establishment of an orifice of communication between the gall-bladder and bowel. Operating on a patient for severe and intractable distress in the region of the gall-bladder, he cut what he thought was a simple adhesion between the gall-bladder and duodenum, but found that he had divided tissues bounding an orifice of communication between the two viscera. He sewed up the duodenum, removed the gall-bladder, incised the common duct, and removed from it two gall-stones. He subsequently operated again and removed from the choledochus other stones which had either been overlooked or had formed again. Here, then, was a case in which nature performed a cholecystenterostomy, and produced the very same conditions which surgeons seek to bring about by the Murphy button, without relieving the pain caused by the trouble.

Now, here I wish to call attention to a condition which must certainly arise in many cases after the operation of cholecystenterostomy. After this operation the stream of bile is diverted through the cystic duct and gall-bladder into the bowel. The gall-bladder takes on itself the function of the common duct. The profession seems to have overlooked the other fact that the common duct becomes to all intents and purposes an abnormal gall-bladder, for, remaining patulous at its upper end, it receives a certain amount of bile which stagnates in its dilated

canal. It must not be forgotten that in these cases of obstruction the common duct often becomes enormously enlarged. In one I recently operated on I could put my thumb into the cavity occupied by the calculus. The bile then collects under circumstances which favor its crystallization. The new gall-bladder already contains one or more stones and is already irritated and inflamed. It may contain pus, but almost certainly contains mucus. Here, then, we have the beginning of a morbid condition of which no man can foresee the end. There is no reason why in the course of time the obstructed duct may not become full to overflow with the numberless gall-stones, which could not fail in this receptacle to cause fully as much disturbance as in the gall-bladder itself. Added to these most valid objections to the operation there is still another. We do not yet know how long the artificial fistula will remain open and permit the free flow of bile. The tendency of such orifices is to gradually contract and close, and what would be the condition of the patient when he ceased to feel the relief given by the operation and began again to have the old troubles in addition to those caused by the operation itself.

The history of the cases operated on by cholecystenterostomy is not yet complete. The immediate relief of symptoms has blinded the surgeon to the ultimate consequences of his work. I believe that the after-histories of many of these operations will be lamentable, and that these same patients will, many of them, in time, come back upon the surgeon's hands with aggravated troubles.

For these reasons I feel strongly opposed to the operation of cholecystenterostomy for jaundice caused by calculi in the common ducts. It is a make-shift operation, easy of performance and rapid in giving relief from symptoms, which will probably retain for considerable time its popularity with the more timid surgeons. It belongs, however, to the period of development in the surgery of the gall-ducts, and cannot possibly long retain the place which it at present holds.

There is only one rational procedure in case of obstruction of the common duct by gall-stones, and that is the removal of

the stones. It is true that in many cases nature accomplishes this by forcing the stones through the duct into the duodenum, and cases are not uncommon in which this occurs and the stones appear in the evacuations. The knowledge of this fact, together with the difficulty in diagnosing the cases from catarrhal and other forms of jaundice, causes many physicians to defer surgical treatment until a late stage of the disorder. The dangers incident to the disease are forgotten, the dangers of the operation are unconsciously exaggerated. An obstructive jaundice is always a dangerous condition. Indeed, the presence of gall-stones, even when the common duct is free, brings with it tribulation and trouble enough to warrant radical means for their relief. In the vast majority of cases there would be a probable gain to the patient if early in the trouble, when symptoms of gall-stones occur with or without jaundice, or when jaundice makes its appearance from doubtful causes, an exploratory operation were made, the exact diagnosis determined, and the necessary measures taken for relief. If we exclude the jaundice which accompanies acute fevers and septic conditions, there are few varieties in which an exploratory operation would not be of service. It must be remembered that the beginning of gall-stones is a catarrhal inflammation. The gall-bladder becomes infected from a catarrh which creeps up the ducts from the bowel. The mucus formed and deposited makes the nucleus on which the bile deposits its crystals. The most severe symptoms, those of colicky pain and intolerable soreness, are due not always to the presence of stones, but often to the inflammation of the gall-bladder and ducts. Now, the early incision and drainage of the gall-bladder enables the morbid secretions to find an exit. The inflammation rapidly subsides, and the case is quickly cured. The absence of gall-stones would bring no discredit on the surgeon, for his operation would act curatively on a condition which left to itself might produce danger, and certainly would produce serious illness and discomfort. If, on the other hand, gall-stones were present, their removal would take place with less pain, and I will even assert less danger, than if left to find a dubious and painful path into the intestine through the cystic and common ducts.

In favorable cases, which means those which are operated on early, before adhesions have formed to obscure the way and render dissection difficult, operations even on the gall-duct are not attended by very great danger. In old cases where the surgeon finds himself entangled in a morbid mass to which he has no clue, where stomach, omentum, gall-bladder, and small intestines are inextricably mixed and bound together, where the patient has lost his vital force by a long struggle with disease, it may become a very difficult, tedious, and dangerous matter to work one's way to the morbid focus and extract the calculus which has caused the mischief. In such cases, even the most experienced surgeon might be tempted to take the shortest way out of the trouble and perform a cholecystenterostomy. This would, however, be a great mistake. If a patient is so exhausted by long-continued jaundice as to make a prolonged operation inadvisable, the surgeon had better establish a biliary fistula through the abdominal wall. It gives the same relief as the operation of cholecystenterostomy, without injuring the intestine or establishing new adhesions within the abdomen. The discharge of bile onto the external surface of the abdomen is indeed not pleasant; but, on the other hand, the patient is not deluded with the vain hope that he is now about to get well, when, in fact, the worst part of the trouble is still in existence. A patient with an external biliary fistula recognizes the fact that he is not yet well, one whose fistula is internal awakes from a false confidence to the knowledge that he is still ill and in need of surgical assistance. How comfortable a patient may be with obstruction of the common duct and an external fistula of the gall-bladder is shown in a patient of Dr. F. L. Newman, upon whom I operated on July 24, 1894.

She was jaundiced and suffering from inflammation of the gall-bladder. I operated and found the gall-bladder everywhere adherent to the abdominal wall. I opened it and extracted 153 gall-stones. She recovered from all of her bad symptoms until some months afterwards the fistula closed. She then became jaundiced again and began to suffer the old pain. Operating on her again, I found that the

former adhesions had nearly disappeared, the gall-bladder was now adherent only where the fistula had opened into the abdomen. Re-establishing the fistula, she immediately recovered her general health. This woman should have had an operation on the common duct in which there are doubtless obstructing calculi, but she refused to go to the hospital, and her surroundings were such as to forbid such an operation at her home. She is now pregnant, but, excepting for her fistula, in comfortable health.

This case illustrates the good which may be effected in securing the absorption of recent exudations of lymph by removing the cause of irritation. At the first operation the whole field disclosed by the cut was one mass of adhesions. At the second, with the subsidence of the irritation, I found that the inflammatory products had almost entirely disappeared, and yet the woman is not well. Sooner or later the gall-stones lodged in the common duct are certain to cause renewed inflammation and distress. The operation of cholecystotomy is nevertheless of great service in these cases where, for any reason, it is not advisable to operate immediately on the common duct. It relieves distress, enables the patient to recover appetite and strength, permits the absorption of inflammatory products, and thus paves the way for the more radical operation on the common duct, which alone will give full relief.

Now, as regards the operation on the common duct, which, in my opinion, a surgeon ought never to hesitate to perform for jaundice caused by calculi, the method chosen must vary with the condition of the patient and the seat of obstruction. Recent cases of obstruction must of necessity offer the best prognosis and easiest operations. There are then no adhesions, no inflammatory masses to obstruct the view of the surgeon, none of the complications, such as abscesses, intestinal strictures, and the like, which are to be found in old cases.

A woman, aged thirty-eight years, came to me on January 9 with jaundice of five months' duration. She was taken when in the seventh month of pregnancy with an attack of colicky pains which lasted four days. She became jaundiced, lost appetite and flesh, and became

inflicted with an intolerable itching. Her passages were thenceforward of a clay color and bad odor, and her urine was continuously charged with bile. She went, nevertheless, to her full time, passed through her confinement without difficulty, and was able to nurse her baby. When I first saw her she was free from fever, had a dark-yellow color and a haggard look, and was covered all over with scratches made by her own nails. Examination of the abdomen revealed nothing abnormal. An operation was advised, to which, however, she did not consent until early in March. On March 6, she entered St. Mary's Hospital, and was prepared as usual for an abdominal operation. On March 7 I operated on her. An incision was made through the rectus muscle to the right of the navel and the peritoneum opened for the introduction of a finger. On making a digital examination of the neighboring organs I found the liver somewhat enlarged, the gall-bladder full of bile, but containing no stones which could be felt, and the cystic and common ducts apparently free from all induration and swelling. Enlarging the opening and carrying the hand down to the pancreas I felt what seemed to be a tumor in the head of the pancreas. I now cut an opening through the omentum and incised carefully the meso-colon over the swelling. An exploring needle introduced into the tumor came upon a hard substance, which could be nothing else than a calculus. Carefully turning the pancreas over I tried to uncover the common duct where it runs behind the pancreas, but found it completely surrounded by the gland. I did not hesitate to cut through the gland and duct-wall directly onto the stone. When released by the incision it popped out onto the abdominal wall as if discharged by a pop-gun, showing thus the pressure under which it was held. The gland substance at the seat of the cut was about one-sixth of an inch in thickness and not at all vascular. Only a moderate amount of bile flowed through the opening. The stone was nearly round and had no facets. It measured two inches in circumference and weighed fifty grains. The wound in the pancreas and duct was carefully closed with kangaroo tendon, and the meso-colon sewed together over it. A rubber drainage-tube was carried down to the spot, the abdominal wound closed, and the usual dressings applied. The gall-bladder was left entirely undisturbed. The result of the operation during the next two days was unpleasant and not at all reassuring. The itching became more intense and the color of the skin changed from a brown to nearly a black. After that she began slowly to lose the color of jaundice, but it was fully three weeks before the

abnormal yellow had left her skin. Two weeks after the operation a small abscess developed in the abdominal wall, but otherwise her recovery was uneventful. She left the hospital for her home on April 6, apparently well.

This history illustrates a class of cases which, until very recently, were doomed to long years of suffering, which in many cases ended in premature death. With such large calculi, the only hope of relief would be by ulceration and discharge of the stones into the bowel.

The dangers incident to this process are, however, very great. Abscesses are apt to form and break into the peritoneal cavity. If this does not occur, adhesions which bind neighboring organs together long afterwards tease and annoy the patient, and even when the calculus finds its way into the gut, the danger caused by its presence is not over. There are now many cases on record of intestinal obstruction caused by the presence of gall-stones in the bowel. I have myself had one, the history of which will bear repetition in this connection. It happened in the person of a patient of Dr. Chapaton, of Detroit.

A woman, aged fifty-five years, had since childhood suffered from frequent attacks of bilious colic. She stated that she had long felt a hard lump in the right side of the abdomen. After an unusually severe colicky attack, the lump suddenly disappeared and there was temporary relief from pain. She began, however, soon to suffer pain again, and vomiting and other symptoms of obstruction became manifest. On operating, I found the bowel occupied at the junction of the jejunum and ileum by a large gall-stone which completely filled its lumen. I extracted it after incising the gut. It was found to weigh 250 grains. It had succeeded in passing, though with difficulty, through the jejunum, but, on reaching the narrower part of the bowel, had caused such terrific irritation as to produce a volvulus. It was interesting to note in the condition of the mesentery the traces of the severe struggle, for the mesentery for a long distance was marked by streaks and patches of extravasated blood. The patient made a good recovery, but owed little thanks to the conservative medicine which had permitted her for years to bear her malady unrelieved.

Returning to the question of operation, such a case as this I have reported in which the calculus was extracted through the pancreas, must be regarded as one of the easiest. The woman had been recently confined, her abdominal muscles were relaxed, she had lost much flesh, and her abdomen contained but little fat. There were absolutely no adhesions and no complications. The surgeon could not ask for an easier case. Far different are those cases in which the operation must be made through hard, thick abdominal walls, on patients whose vital forces through long-standing disease have become enfeebled, and whose abdomens are occupied by old inflammatory indurations, which bind all organs together, obliterate all landmarks, and make every movement on the part of the surgeon one of peril.

The pages of Riedel and Kehr present cases in which enormous difficulties have been overcome by a pluck, patience, and courage which extort the admiration of the surgeon. They all, however, sing one song which the practitioner may listen to with much profit. It is the warning against delay. The delay which permits a patient to suffer for years from colic and abdominal distress, which lets him become jaundiced, weak, and enfeebled, and which suffers the abdomen to become filled with indurated tissues which hinder the movements of all abdominal organs. In old neglected cases, the difficulties are such as to call for all of the resources of the most experienced surgeon. I do not purpose in this paper to discuss all these difficulties or the methods of overcoming them, but I must call attention to two points in the after-treatment upon which I think a uniform success will depend. These are immediate suture of the gut and proper drainage. Certain authors have advised and practised the method of incising the duct, and leaving it unsutured to heal by granulations. This seems to me an error in practice. In these cases, as in all others, the effort should be to secure union by first intention, and this is put out of the question, if the incision in the duct is not sewed together. Even though the sutures do not hold, they accomplish good by preventing the escape of bile until the peritoneal cavity has become shut off by adhesions from the seat of injury. This takes place in twenty-four hours, and

it is a poor suture that would not hold that long. In many cases the duct will heal by first intention. This happened in a case which I have just reported. After the duct and pancreas were sutured not a drop of bile escaped. I am inclined to think that an incision through the pancreas into the duct may be preferable to one through the naked duct wall for the reason that the surgeon is enabled to apply two or three tiers of stitches, and thus fortify the tissues against the escape of bile. The immediate result after operations on the common duct is sometimes to cause an immediate exacerbation of symptoms. This happened as I have reported in my own case. It is probably due either to a clogging of the duct with coagula of blood or to an obstruction by swelling of the incised membranes. There is always danger of a subsequent escape of bile through the wound in the duct, and, therefore, drainage by a rubber tubing is in my opinion the only proper practice in cholecystotomy.

Drainage by means of gauze is to be avoided, for gauze does not act efficiently as a drain for bile. This is especially true of iodoform gauze. I lost one patient after the extraction of a calculus from the cystic duct by trying to treat it without suture, and with iodoform gauze drainage. There had been considerable oozing, and I had flooded the abdominal cavity with water, a practice which I have since entirely abandoned. The wound in the cystic duct was deep and inaccessible, and I contented myself with inserting a gauze drain. On the next morning the dressings were saturated with bloody water, but no bile. The temperature was normal, but the patient complained of great pain. On the second morning the temperature began to rise, and the iodoform gauze was removed. Its withdrawal was followed by an enormous discharge of bile, and yet the gauze itself was hardly stained. The patient died of peritonitis. Here, then, was a gauze drain which acted with great efficiency in regard to the conduction of water, and not at all as a drain for bile. Whether the fault lay in the gauze or in the chemicals incorporated with it, I am unable to determine.

In conclusion, I would urge upon a general practitioner the careful study of what has been done of late years by surgeons in

relieving the distressing maladies which have their seat in the upper part of the abdominal cavity. The greater number of those are connected with maladies of the gall-bladder and gall-ducts. The presence of gall-stones, the occurrence of inflammations in the gall-passages due to sepsis conducted from the intestines, the formation of adhesions between the viscera, and the growth of cancers and tumors in these and neighboring organs can often be diagnosticated only by exploratory operations, which, fortunately, if properly conducted have little danger. The most of the maladies of these regions can be cured or relieved by surgical operations, some by the natural processes of cure, and a few, a very few, by internal medication. How long, then, shall we permit such patients to suffer their woes without instituting rational measures for their relief?